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Ecology - based environmental education in years between 1999-2008 in protected areas of Turkey: Aims and objectives, problems and suggestions

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Abstract

The purpose of this study is to examine and evaluate the ecology - based environmental education program which was applied in years between 1999-2008 in national park and its near surroundings of Turkey. This education programme aims at using natural and cultural resources of in the national parks of Turkey, to teach graduate research assistants and teachers/scout teachers about nature. The expectation is to increase the environmental awareness of participants in general. At the end of the education program, it is expected that the participants will develop a better understanding of local, regional, national as well as international environmental problems; will be able to discuss and provide alternative solution to global ecological crises; and will take action in their individual lives towards creating a more sustainable environment for future. The main objective will be to teach natural interactions in an ecosystem. Emphasis will be given to human action that has been interrupted that interaction and made natural environments less sustainable. Therefore, particular emphasis will be given to cultural ecology of the protected are and the participants are expected to develop a through understanding of human and environmental interaction. The knowledge gained from the education is expected to be used by the participants for popularization of the science and for all kinds of sustainable activities in the future. Ecology-based environmental education is carried out in the national parks and its near surroundings in Turkey, under the coordination of Science and Society Department of Scientific and Technological Research Council of Turkey (TUBITAK) by collaboration of General Directorate of Nature Protection and National Parks, Ministry of Environment and Forestry the nearest universities to the parks and Ministry of Education

Keywords: Protected areas; ecology-based environmental education,; sustainable use of national parks; Turkey

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1. Introduction

The programme aims at creating a positive perception of science, arising scientific curiosity, and providing scientific activities by using natural and cultural resources of National Park and surrounding areas in Turkey. The principal purpose of the programme is to provide a framework for participants to develop desire, curiosity, and motivation, which will provide a base for lifelong learning. The purpose is not to provide mass scientific information without individualizing it. The programme will teach the participants the way nature works on the basis of relationships among different parts, provide an opportunity to observe, set the stage for an interrogative learning environment, increase awareness on contemporary environmental problems, and encourage individuals to think critically and scientifically.

Named Ecology-based environmental education in National Park and surrounding areas in Turkey, the program will cover topics such as the formation and development of geologic and geomorphologic feature; the important nature protection areas and their resources bases; flora and fauna of the area; wildlife protection activities and programs; Underwater biological diversity in the sea; possible effects of global warming on the area; sustainable use and management of fresh water resources in the World; wetland management practices; the archeological, historical, natural, and cultural resources of the national park; the effects of contemporary environmental problems on the critical ecosystems in the area; the cultural ecology i.e., human impact and interrelationships between man and the environment; everyday life and local cultures in relation to the natural resources use.

The target group of the programme in the first part will be teachers working for the Ministry of Education, scout leaders and other who are thought to help disseminate the knowledge gained during the project. Such people include working in the health sector, representatives of Non-Governmental Organizations etc. The participants of the usually second period will be research assistants, masters' and doctoral students from different universities. While determining the target groups we thought that the participants should be able to perceive correctly the problems as a result of human-environment interaction, the threads towards the targets of sustainable developments and biological diversity and transfer these understandings to the groups they educate. It is expected that these teachers, scout leaders, research assistants and graduate students will integrate the knowledge and understanding they get from the program and if possible organize similar nature education programs in their areas. The period of the programme will be from 01 May to 30 September, every year, divided into two 10-day sections.

In order to create the desired effect the method will go beyond the classical teaching methods. A group of experts has decided the teaching topics. These topics will be thought in a non-traditional class setting putting no hierarchy between the teacher and the learner; the theoretical information will be thought with a popular setting and supported by fieldwork. Participatory and interrogative approaches will be prioritized and participants are expected actively involve the process. Observation and hands-on activities by using different science kits will be provided; nature will be used as the main laboratory; students will find time and opportunity to express their ideas and be part of the learning process; they will be given opportunity to determine certain problems and to propose solutions for these problems by forming working groups. Particular emphasis will be given the ways to disseminate knowledge they gather during the program. At the same time, we aim to develop the ability of masses to embrace science by teaching the participants the language of nature. The teaching method will be holistic at the end, providing sustainable use and protection of protected areas.

Ecology-based Environmental Education in the National Parks of Turkey:

Bridging Europe, Asia and Africa, surrounded by seas of different ecological characteristics from three sides, with altitudes ranging from sea level to above 5000 meters results a variety of landforms, different climates, biodiversity and different cultures in Turkey. For this reason old French travelers named her as "Asia Mineur". Turkey has a biological wealth only comparable to whole Europe. There has been above 9000 plant species identified in Turkey, more than one third of those being endemic. It is believed that the number of animal species present in Turkey, are around 80000 (more than Europe). Since Turkey has different eco-regions there is a necessity to create different training projects tailoring on their own natural and cultural values (Ozaner, 2005)

In most countries, academically researches about the studies of "Ecology-Based Environment Education in the National Parks" have not been overlooked. Hungerford & Volk (1990), Armstrong & Impara (1991), Adams (1993), Berkowitz (1993), Yoshida (1993), Hale ve Hardie (1993), Uysal et al.(1994), Smith-Sebasto (1995), Ahn & Kim (1996), Jeong (1997), Arı&Soykan (2004), Ozaner (2005) and DeChano (2006) can be counted as among these

researches. Although there are lots of researches carried out about the environment education in Turkey, the researches regarding "*National Park Education*" started in real terms in 1999. The number of scientific researches about the national park education which is one of the parts of the nature, history and culture-based environment education is very low. These studies have been carried out in order to define the point come in the field of nature, history and culture-based national park education in Turkey.

In Turkey, most protected areas belong to a park system and governed by national laws. There are 39 National Parks, 29 Nature Parks, 32 Nature Reserve Areas and 104 Natural Monuments protected by the National Parks Law (No. 2873) that has been come into force in 1983 by the Ministry of Agriculture, Forestry and Rural Affairs. Besides the above mentioned parks, 14 Specially Protected Areas are protected by the Decree-Law on the Establishment for the Protection of Special Areas (No: 383) which was issued on 13 November 1989 by Ministry of Environment. Moreover, 12 of the internationally important wetlands of Turkey have been added to Ramsar Convention List. In addition to above mentioned protected areas, there are 81 Wildlife Protection Areas declared by the Hunting and Terrestrial Law, covering about 1.9 million hectares, and, about 15 900 hectares forest area reserved for camping site. Besides the above mentioned protection zones, there are total 9 161 archeological, natural, urban, history, urban archeological and another sites areas declared by the Law of Protection of Cultural and Natural Assets, under the responsibility of Ministry of Tourism and Culture.

In spite of afore mentioned rich natural values of Turkey, there were very restricted numbers of trainers who can teach the subjects in ecological manner. For this reason, Environment Atmosphere, Earth and Marine Sciences Group (CAYDAG) of The Scientific and Technological Research Council of Turkey (TUBITAK) has prepared a project entitled "***Ecology-Based Environment Education in the National Parks***" and offered to Environmental Sector of State Planning Organization of Turkey in 1998. The project was accepted, and started in 1999. Ecology-based environmental education is carried out in the national parks and it's near surroundings of Turkey, under the coordination of Scientific and Technological Research Council of Turkey (TUBITAK) by collaboration of General Directorate of Nature Protection and National Parks, Ministry of Environment and Forestry the nearest universities to the parks and Ministry of Education since 1999. The purpose of the programme is to give ecology based multi-disciplinary education for the university students, research assistances, scout leaders and as well as for professional tourist guides in the natural environment of national parks, where the nature is used as a laboratory. University staff members, experts of national parks and as well as experts in NGO's constitute training teams. The interactive training is carried on by incorporating the natural, social, historical, scientific, ethical and cultural aspects of landforms by observing, touching, and sensing. The project also aims to increase awareness for local, regional and global nature of the environmental issues which are very critical for sustainable development. Ecotourism potential of national parks are also discussed in training. The first education area was created in the Termessos National Park, located 35 km NW of Antalya in 1999. Training in Kackar Mountains National Park in NE Turkey has been started in the year 2000 and training in Kazdağı (İda Mountain) National Park in NW Turkey and Cappadocia National Park in central Turkey have been added to the list in 2003, and in 2004 respectively.

The number has been increased to 10 in 2005 by using following parts as training areas: Ecology-based environmental education started in 2005 Thrace Part of Turkey (İğneada Longoz Forests and Gala Lake National Park), Spil Mountain and Gediz Delta National Parks (Manisa-İzmir) in the western Turkey, Ilgaz and Küre Mountains National Parks in Kastamonu in the northern Turkey, Uludağ National Park near Bursa in the nortwest Turkey, Palandöken Mountains (Erzurum)-Sarıkamış Mountains (Kars) National Parks in the eastern Turkey, Kemaliye (Erzincan) and surroundings in south of eastern Turkey. Two more training centers are planning to open in 2006 one in Southeast Anatolian Project Area (GAP), including Şanlıurfa, Mardin and Diyarbakır cities, and the other is Amanos Mountains National Parks, Antakya, Asi (Orontes) Delta areas in SSE Turkey. Ecology-based environmental education started in 2007 protected areas in Isparta Province, Elazığ ve Malatya province and ıts surroundings, radioactivity in nature Blacksea Region (Trabzon), the project to increase the insect awareness of participants. And started in 2008 Karapınar Desert Model, Yozgat Çamlığı National Park, Beyşehir Lake National Park and Konya, Çanakkale and near surroundings. About 30 participants were accepted for each education period. Half of this number is reserved for research assistants of different disciplines. Education period is 10 days. At least seven days are spending in the field. Because the language of the nature has a multi-disciplinary character, field-studies are usually carried out by the collaboration of three trainers, expert on geomorphology, flora and fauna. Academicians who have popular language in their disciplines (masters who can speak without intensive

terminology) are invited for teaching. Education is dominated on ecology thought and teaches interrelations/interactions between different disciplines. Most of the knowledge is gathered from geography and biology disciplines. Other goal of the project is to understand interaction of different ecosystems and its balance, and the problems derive from deterioration of this synthesis. At this frame, relations between rock types and soils under existing climate, relations between soil and flora, and as well between fauna and flora are interpreted. Additionally, roots of the indigenous local cultures are discussed to find an answer to the question "how existing natural resources effected cultures of old and present rural communities". Consequently, mythology (legends of old civilizations) and folklore of the present cultures are reinterpreted at the base of natural resources of the regions. Because environmental education is a way for reflecting science in a much attractive and popular way, it is expected that research assistants will gain a broad fundamental environmental thoughts and a popular language for a better teaching in their disciplines. Research assistants from different departments of the universities and scout leaders teaching in elementary schools were chosen for education in 2005. Names of scout leaders are determined by Ministry of Education, while, research assistants were chosen by project leaders on the assessment of their CV's and on application forms. The ones who work in non governmental organizations or environmental protection associations voluntarily - either in their undergraduate or graduate education time are preferred. Other two factors for preferation are non smoking and playing a musical instrument. Every year, Ministry of Education has been training more than 8 000 young scout students in the field camps by scout teachers. The main aim of these training is doing camping activities more than "learning language of the nature". Therefore, scout teachers are considered very important to be given environmental education. The scout teachers are practicing the new method of environmental field training on their scouts as soon as finishing our training. The project is supported by the government. Therefore, numbers of training areas, education periods and as well as participants are restricted. We wish to extend training centers, increase the numbers of participants and incorporate with the NGO's who are doing some kind of field training.

2. Results and Discussion

This education style which could be estimated as a new for in Turkey, was achieved with the participation of coordination of Scientific and Technological Research Council of Turkey (TUBITAK) and Ministry of National Education and General Directorate of Nature Protection and National Parks, Ministry of Environment and Forestry and the nearest universities with the support of lecturers from different universities in Turkey and with the logistic help of the nearest Municipality. It is considered that enabling the continuity of this and similar projects under TUBITAK (The Scientific and Technological Research Council of Turkey) Science and Society Department (Today, it supports the out-of-school education of Nature Education in 18 areas and of the Science Camps and Schools in 25 areas within the period which started in Termessos National Park in 1999. This shows the point that interest and concern have come as a common effect) is important. The efficiency of physical conditions of the education centers, the sort distance between education centre and national parks, exact application of the program, self-sacrifices of participants and lecturers were the most important factors in the success of the education participant's e-mails and their answers to the investigation at the end of the training showed each sacrifice worthless. Most of the participant students being researchers or Ph. D. or Ms. degree help to create a desired interaction environment. Participants entire of being a scientist both, are criteria for being successful and it shows the consequence that their former classic training should be more practical. At the end of program some of Ph. D. and Ms. degree students admitted that they change their thesis subjects or reexamine them with this point of view of the training. The positive effect of lesson conference, seminar and practice work, interaction between Ph. D. and Ms. degree students become very characteristics. The interactive approaches to classroom environment and land practices showed its positive results in a very short time, some of the students who were timid in participating in debates and paralyzed achieved serious developments in their dialogues with other participants and lecturers at the third day of the education. During the application of the program, some lesson subjects could be boring because of too much technique details and comprehending at different levels on account of their homogeneous configurations when the interview results evaluated in this respect. It become leading for coming years, invitations of some lectures were changed. In some presented lessons, it was seen that similar topics processed. To avoid this coincidence, some lessons weren't put in next year schedule. Supposing that it is inevitable to make some changes in next year's programmed in the light of interview results that topics are evaluated objectively by students.

3. Suggestions

TUBITAK formed a protocol with the Ministry of Environment and Forestry, Directorate of Nature Protection and National Parks and the Ministry of National Education for these projects, which will be helpful to carry out the projects. The directors have preliminary knowledge in the trainings which we have carried out in some areas under protection such as Kazdağı National Park, Kazdağı Nature Protection Area, Ayvalık Islands Natural Park and Troia Historical National Park and this will reduce the loss of time and effort. Similarly, the teachers and Scout Leaders taking part in the project from the Ministry of National Education will avoid the difficulties about the permission. It is considered that reviewing the scientific designs and plans of the projects, and the formation of the necessary control mechanism on this subject by the Head of Science and Society Department will be beneficial.(Determining the participants, determining the trainers, selecting the subject and content, setting the objective, etc.). It is thought that planning a broad-based training seminar in which the project coordinators and trainers will take part together in order to use a popular language and conduct common activities in nature education will contribute to forming a common denominator in these trainings. The efforts of the coordinators regarding measuring the social effects of the education given are very important. It is considered that seeing how the trainings influence the social mind through mathematical figures will enable the coordinators to make correct decisions and to renew themselves. Thus, it is also regarded as important that the data of the questionnaires applied to the participants can be concluded through some programs such as SPSS. With the contribution of TÜBİTAK Science and Society Department, "Nature Education Symposium" where the studies conducted up to now such as Kazdağı National Park, Küre Mountains National Park or Kaçkar Mountains National Park can be analyzed will be beneficial as it will also come with an atmosphere where these trainings will be severely discussed. We consider that an assessment meeting different from the above-named Symposium and under the hosting of the Science and Society Department after every project period will also be helpful. As a result of all these, we also think that the preparation of a "Nature School" design model and discussions on this model will provide new expansion.

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